

Pressure-independent globe valve, 2-way,  
Flange, PN 16

- For closed water circuits (pH >7)
- For district heating



Picture may differ from product

### Type overview

| Type            | DN  | V'nom<br>[l/s] | V'nom<br>[m³/h] | Kvs theor.<br>[m³/h] | Stroke | PN | Sv min. |
|-----------------|-----|----------------|-----------------|----------------------|--------|----|---------|
| EXT-H615P-125   | 15  | 0.35           | 1.3             | 2.5                  | 10 mm  | 16 | 20      |
| EXT-H615P-200   | 15  | 0.55           | 1.8             | 4                    | 10 mm  | 16 | 20      |
| EXT-H625P-315   | 25  | 0.80           | 3               | 6.3                  | 11 mm  | 16 | 22      |
| EXT-H625P-400   | 25  | 1.1            | 4               | 8                    | 11 mm  | 16 | 21      |
| EXT-H632P-650   | 32  | 1.8            | 6.5             | 12.5                 | 13 mm  | 16 | 20      |
| EXT-H640P-900   | 40  | 3.00           | 11              | 20                   | 13 mm  | 16 | 23      |
| EXT-H650P-1500  | 50  | 4.4            | 16              | 32                   | 13 mm  | 16 | 22      |
| EXT-H665P-2500  | 65  | 7.7            | 28              | 50                   | 15 mm  | 16 | 22      |
| EXT-H680P-3600  | 80  | 11.1           | 40              | 80                   | 18 mm  | 16 | 20      |
| EXT-H6100P-6500 | 100 | 16.6           | 60              | 125                  | 21 mm  | 16 | 24      |
| EXT-H6125P-8000 | 125 | 22.2           | 80              | 180                  | 21 mm  | 16 | 24      |

Kvs theor.: theoretical Kvs value for pressure drop calculation

### Technical data

|                 |                                                        |                                                                                                                                                             |
|-----------------|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Functional data | Fluid                                                  | Water, water with glycol up to max. 30% vol.                                                                                                                |
|                 | Fluid temperature                                      | 5...140°C [41...284°F]                                                                                                                                      |
|                 | Maximum differential pressure across the control valve | 1000 kPa                                                                                                                                                    |
|                 | Differential pressure note                             | To ensure cavitation free operation, the maximum differential pressure $\Delta p_{max}$ needs to be calculated according to the notes for project planning. |
|                 | Flow characteristic                                    | equal percentage                                                                                                                                            |
|                 | Leakage rate                                           | max. 0.02% of the Kvs value (DN 15, 25)<br>max. 0.05% of the Kvs value (DN 32, 40, 50, 65, 80)<br>max. 0.1% of the Kvs value (DN 100, 125)                  |
|                 | Closing point                                          | Bottom (▼)                                                                                                                                                  |
|                 | Cavitation factor (Z)                                  | DN 15: 0.6<br>DN 25/32: 0.55<br>DN 40/50: 0.5<br>DN 65: 0.45<br>DN 80: 0.4<br>DN 100/125: 0.35                                                              |
|                 | Pipe connection                                        | Flange<br>according to EN 1092-2                                                                                                                            |
|                 | Installation orientation                               | upright to $\pm 45^\circ$ (in relation to the spindle)                                                                                                      |
|                 | Servicing                                              | maintenance-free                                                                                                                                            |
|                 | Materials                                              |                                                                                                                                                             |
|                 | Valve body                                             | EN-GJL-250 (GG 25)                                                                                                                                          |
|                 | Body finish                                            | with protective paint                                                                                                                                       |

## Technical data

|                  |                 |                      |
|------------------|-----------------|----------------------|
| <b>Materials</b> | Closing element | WN1.4057             |
|                  | Spindle         | WN1.4404             |
|                  | Spindle seal    | FPM, EPDM (ISO 1629) |
|                  | Seat            | WN1.4021             |
|                  | Spring          | WN1.4310             |
|                  | Diaphragm       | EPDM                 |

## Safety notes



- The valve has been designed for use in stationary heating systems and must not be used outside the specified field of application, especially in aircraft or in any other airborne means of transport.
- Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied with during installation.
- The valve may not be disposed of as household refuse. All locally valid regulations and requirements must be observed.
- When determining the flow rate characteristic of controlled devices, the recognised directives must be observed.

## Product features

**Operating mode** The mechanical pressure-independent globe valve consists of a mechanical differential pressure controller and a control valve which is motorised with a Belimo actuator. The mechanically set maximum flow ( $V_{\max}$ ) is assigned to the control signal DDC (typically 10 V / 100%). The differential pressure controller compensates for pressure fluctuations and keeps the differential pressure across the control valve constant. The flow can be controlled via the control signal DDC. However, it is important to note that correct flow control requires a minimum differential pressure across the valve.

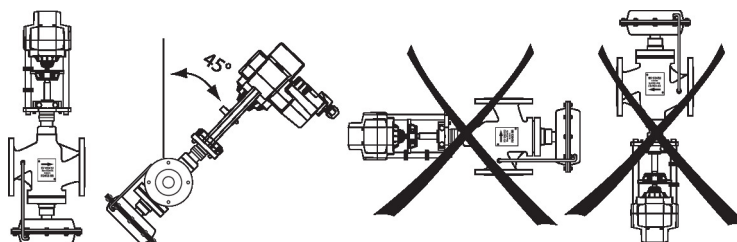
**Flow characteristic** An equal percentage flow characteristic is produced by the profile of the valve cone.

**Fluid velocity** Standard values for low-noise operation in HVAC systems are fluid velocities of 1...2 m/s. At fluid velocities above 2 m/s, further flow effects like noise as well as cavitation can occur. This can reduce the service life of a valve depending on the situation.

**Minimum differential pressure** To maintain adequate flow control, it is essential that the differential pressure remains above a certain threshold.  
This threshold is calculated as follows:  $(V/Kvs)^2 + 0.2 \text{ bar}$  ( $V$  = flow rate ( $\text{m}^3/\text{h}$ )).  
It is important to maintain the differential pressure above this calculated value to guarantee optimal flow control.

## Installation notes

**Permissible installation orientation** The globe valve may be mounted upright to  $\pm 45^\circ$ . It is not permissible to mount the globe valves with the stem pointing sideways or downwards.



**Water quality requirements** The water quality requirements specified in VDI 2035 must be adhered to.  
Belimo valves are regulating devices. For the valves to function correctly in the long term, they must be kept free from particle debris (e.g. welding beads during installation work). The installation of a suitable strainer is recommended.

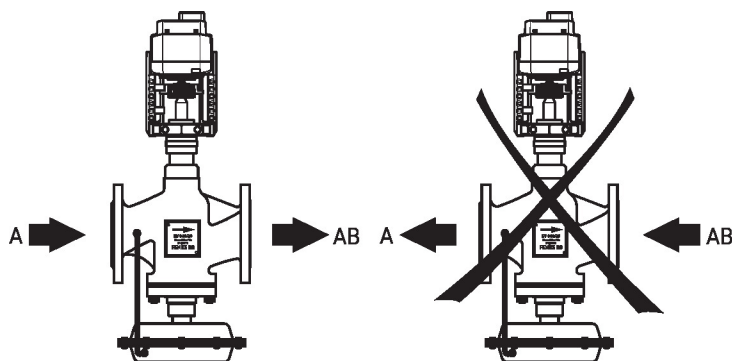
## Installation notes

**Servicing** Globe valves and globe valve actuators are maintenance-free.

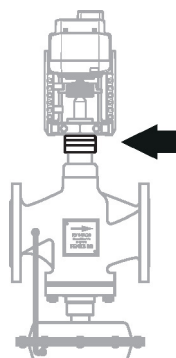
Before any service work on the control element is carried out, it is essential to isolate the globe valve actuator from the power supply (by unplugging the electrical cables if necessary). Any pumps in the part of the piping system concerned must also be switched off and the appropriate slide valves closed (allow all components to cool down first if necessary and always reduce the system pressure to ambient pressure level).

The system must not be returned to service until the globe valve and the globe valve actuator have been reassembled correctly in accordance with the instructions and the pipeline has been refilled by professionally trained personnel.

**Flow direction** The direction of flow, specified by an arrow on the housing, is to be complied with, since otherwise the valve could become damaged.



**Flow setting** The valve maximum flow ( $V'_{max}$ ) is an adjustable parameter that can be controlled by rotating the setting ring located on the valve neck. The valve offers the ability to adjust the flow rate via a counterclockwise rotation from its minimum position.



Rotate the setting ring counterclockwise from its lowest position to increase the flow rate.

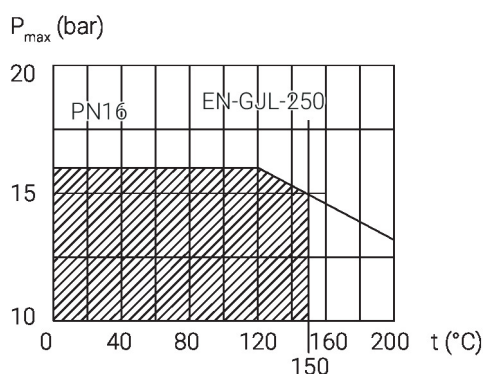
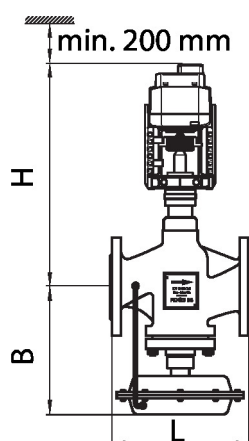
The relationship between the setting ring rotation and the resulting flow is depicted by the flow setting curves provided in the notes for project planning EXT-H6..

### Motorisation

|                 | DN  | LV..A.. 500N | NV..A.. 1000N | EV..A.. 2500N |
|-----------------|-----|--------------|---------------|---------------|
| EXT-H615P-125   | 15  | x            |               |               |
| EXT-H615P-200   | 15  | x            |               |               |
| EXT-H625P-315   | 25  | x            |               |               |
| EXT-H625P-400   | 25  | x            |               |               |
| EXT-H632P-650   | 32  | x            |               |               |
| EXT-H640P-900   | 40  |              | x             |               |
| EXT-H650P-1500  | 50  |              | x             |               |
| EXT-H665P-2500  | 65  |              |               | x             |
| EXT-H680P-3600  | 80  |              |               | x             |
| EXT-H6100P-6500 | 100 |              |               | x             |
| EXT-H6125P-8000 | 125 |              |               | x             |

**Installation notes**

**Pressure/temperature diagram** The maximum operational pressure is directly correlated to the temperature of the circulating water.


**Dimensions**
**Dimensional drawings**


| Type            | DN  | B<br>[mm] | L<br>[mm] | H<br>[mm] | Weight  |
|-----------------|-----|-----------|-----------|-----------|---------|
| EXT-H615P-125   | 15  | 170       | 130       | 245       | 9.5 kg  |
| EXT-H615P-200   | 15  | 170       | 130       | 245       | 9.5 kg  |
| EXT-H625P-315   | 25  | 205       | 160       | 295       | 12.5 kg |
| EXT-H625P-400   | 25  | 205       | 160       | 295       | 12.5 kg |
| EXT-H632P-650   | 32  | 210       | 180       | 300       | 15.5 kg |
| EXT-H640P-900   | 40  | 220       | 200       | 300       | 17.5 kg |
| EXT-H650P-1500  | 50  | 235       | 230       | 305       | 24.5 kg |
| EXT-H665P-2500  | 65  | 360       | 290       | 435       | 46 kg   |
| EXT-H680P-3600  | 80  | 400       | 310       | 450       | 55 kg   |
| EXT-H6100P-6500 | 100 | 425       | 350       | 465       | 78 kg   |
| EXT-H6125P-8000 | 125 | 480       | 400       | 480       | 93 kg   |